Amendments to the Claims

Please cancel claims 55-57, 61, 72-74 and claims 76-81 without prejudice to or disclaimer of the subject matter therein.

1-39. (Canceled)

40. (Currently amended) A method to determine the immune status of an animal against an infectious agent, said method comprising the steps of:

(a) contacting a biological specimen of said animal with a recombinant antigen capable of forming a complex with an antibody specific for said infectious agent under conditions suitable for formation of said complex, wherein said recombinant antigen is a protein from said infectious agent, and wherein said protein is free of contaminants that result in false positives, and wherein said infectious agent is selected from the group consisting of a feline calicivirus, a feline herpesvirus, a feline parvovirus, and a feline leukemia virus; and

(b) detecting the presence or absence of said complex, wherein the presence or absence of said complex is indicative of the immune status of said animal.

41. (Previously presented) The method of Claim 40, wherein the presence of said complex is indicative of non-susceptibility to infection by said infectious agent.

42. (Previously presented) The method of Claim 40, wherein said antibody is selected from the group consisting of a maternally-derived antibody, an antibody generated in response to natural infection by said infectious agent and an antibody generated in response to vaccination against said infectious agent.

43. (Previously presented) The method of Claim 40, wherein said biological specimen is selected from the group consisting of blood, serum, plasma, saliva, urine, tears, aqueous humor, cerebrospinal fluid, lymph, nasal secretion, tracheobronchial aspirate, milk, colostrum, intestinal secretion and feces.

44. (Previously presented) The method of Claim 40, wherein said animal is selected from the group consisting of a cat, dog and horse.

45. (Previously presented) The method of Claim 40, wherein said recombinant antigen is immobilized on a substrate.

46. (Previously presented) The method of Claim 40, wherein said method comprises performing an assay selected from the group consisting of an enzyme-linked immunoassay, a radioimmunoassay, a fluorescence immunoassay, a luminescence assay, a phosphorescence assay, an immunoblot assay, an immunodot assay, an immunoprecipitation assay, a lateral flow assay, a flow-through assay, an agglutination assay, a particulate-based assay, and an electronic sensory assay.

47. (Previously presented) The method of Claim 40, wherein said step of detecting comprises applying a detection reagent that binds to said complex, if present, to obtain a test signal, wherein presence or absence of a test signal is indicative of the immune status of said animal.

48. (Previously presented) The method of Claim 47, wherein said detection reagent comprises an antibody-binding partner conjugated to a detectable marker.

49. (Previously presented) The method of Claim 48, wherein said antibody-binding partner is selected from the group consisting of an Fc-binding antibody, an Fc receptor, and an antibody-binding bacterial surface protein.

50. (Previously presented) The method of Claim 48, wherein said detectable marker is selected from the group consisting of an enzyme, a radioactive label, a fluorescent label, a luminescent label, a phosphorescent label, a chromophoric label, a metal sol label, a metal-binding label, a physical label, an electronic label, and a ligand.

51. (Previously presented) The method of Claim 40, wherein said recombinant antigen further comprises a detectable marker.

52. (Previously presented) The method of Claim 40, wherein said method is conducted within about one day.

53. (Previously presented) The method of Claim 40, wherein said method is conducted within about one hour.

54. (Previously presented) The method of Claim 40, wherein said method is conducted in a time period of between about one minute and about fifteen minutes.

55 - 57. (Canceled)

58. (Previously presented) The method of Claim 40, wherein said recombinant antigen is a calicivirus protein.

59. (Currently amended) The method of Claim 40, wherein said recombinant antigen is a ~~distemper~~ feline leukemia virus protein.

60. (Previously presented) The method of Claim 40, wherein said recombinant antigen is a herpesvirus protein.

61. (Canceled)

62. (Previously presented) The method of Claim 40, wherein said recombinant antigen is a parvovirus protein.

63. (Currently amended) The method of Claim 40, wherein said recombinant antigen is selected from the group consisting of a feline calicivirus capsid protein, a feline herpesvirus glycoprotein B protein, a feline herpesvirus glycoprotein C protein, a feline herpesvirus

glycoprotein D protein, a feline parvovirus VP12 protein, a feline parvovirus VP2 protein, a feline leukemia virus p27 protein, a feline leukemia virus gp70 protein, and a feline leukemia virus p27-gp70 fusion protein~~, a canine distemper virus fusion protein, a canine adenovirus protein, and a canine distemper virus hemagglutinin protein~~.

64. (Currently amended) The method of Claim 40, wherein said recombinant antigen is selected from the group consisting of $PFCVCP_{671}$, $PFCVCP_{547}$, $PFPVVP2_{584}$, $PFPVVP2C_{243}$, $PFPVpVP12_{620}$, $PFPVpVP2_{477}$, $PFHVgB_{943}$, $PFHVgB_{250}$, $PFHVgC_{534}$, $PFHVgC_{467}$, $PFHVgC_{467(opt)}$, $PFHVgD_{374}$, $PFHVgD_{300}$, $PFeLVp27_{253}$, $PFeLVp27_{619}$, $PFeLVp27\text{-}gp70_{611}$~~, $PCDVH_{604}$, $PCDVF_{662}$~~, PHis-$PFCVCP_{671}$, PHis-$PFCVCP_{547}$, PHis-$PFPVVP2_{584}$, PHis-$PFPVVP2C_{243}$, PHis-$PFPVpVP12_{620}$, PHis-$PFPVpVP2_{477}$, PHis-$PFHVgB_{943}$, PHis-$PFHVgB_{250}$, PHis-$PFHVgC_{534}$, PHis-$PFHVgC_{467}$, PHis-$PFHVgC_{467(opt)}$, PHis-$PFHVgD_{374}$, PHis-$PFHVgD_{300}$, PHis-$PFeLVp27_{253}$, PHis-$PFeLVp27_{619}$, and PHis-$PFeLVp27\text{-}gp70_{611}$~~, PHis-$PCDVH_{604}$, and PHis-$PCDVF_{662}$~~.

65. (Currently amended) The method of Claim 40, wherein said recombinant antigen comprises an amino acid sequence having at least 85% identity with an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, and SEQ ID NO:32~~, SEQ ID NO:34 and SEQ ID NO:36~~.

66. (Currently amended) The method of Claim 65, wherein said recombinant antigen comprises an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, and SEQ ID NO:32~~, SEQ ID NO:34 and SEQ ID NO:36~~.

67. (Currently amended) The method of Claim 40, wherein said recombinant antigen is encoded by a nucleic acid sequence having at least about 85% identity with a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5,

SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, and SEQ ID NO:31~~, SEQ ID NO:33, and SEQ ID NO:35~~.

68. (Currently amended) The method of Claim 40, wherein said recombinant antigen is encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, and SEQ ID NO:31~~, SEQ ID NO:33, and SEQ ID NO:35~~.

69. (Previously presented) The method of Claim 40, wherein said biological specimen is contacted with a recombinant calicivirus antigen, a recombinant herpesvirus antigen and a recombinant parvovirus antigen under conditions such that the immune status of said animal to calicivirus, herpesvirus and parvovirus infection is determined.

70. (Currently amended) The method of Claim 40, wherein said biological specimen is contacted with a recombinant parvovirus protein, a recombinant ~~distemper virus~~ calicivirus protein, a recombinant herpesvirus protein and a recombinant ~~adenovirus~~ feline leukemia virus protein under conditions such that the immune status of said animal to parvovirus, calicivirus, herpesvirus~~distemper virus~~ and feline leukemia virus ~~adenovirus~~ infection is determined.

71. (Currently amended) A method to determine the immune status of a pre-vaccinated animal, said method comprising:

(a) obtaining a biological specimen from an animal that had been vaccinated at least six (6) months prior to obtaining said biological specimen;

(b) contacting said biological specimen with a recombinant antigen capable of forming a complex with an antibody specific for said infectious agent under conditions suitable for formation of said complex, wherein said recombinant antigen is a protein from said infectious agent, wherein said protein is free of contaminants that result in false positives and wherein said

infectious agent is selected from the group consisting of a feline calicivirus, a feline herpesvirus, a feline parvovirus, and a feline leukemia virus; and

(c) detecting the presence or absence of said complex, wherein the presence or absence of said complex is indicative of the immune status of said animal.

72 -74. (Canceled).

75. (Currently amended) A method to determine the immune status of an animal against an infectious agent, said method comprising the steps of:

(a) contacting a biological specimen of said animal with a recombinant antigen capable ~~for~~ of forming a complex with an antibody specific for said infectious agent under conditions suitable for formation of said complex, wherein said recombinant antigen is a protein from an infectious agent selected from the group consisting of a feline calicivirus, a feline herpesvirus, a feline parvovirus, and a feline leukemia virus, and wherein said protein is free of contaminants that result in false positives;

(b) applying a detection reagent capable of binding to said complex to produce a test signal and a reference reagent to produce a reference signal;

(c) detecting the test signal and the reference signal; and

(d) comparing the intensity of the test signal with the intensity of the reference signal to determine the immune status of said animal, wherein a more intense test signal compared to the reference signal indicates the animal is not susceptible to infection by said infectious agent.

76 - 81. (Canceled)

82. (New) The method of claim 69, wherein said recombinant calicivirus antigen comprises an amino acid sequence having at least 85% identity with an amino acid sequence selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4.

83. (New) The method of claim 69, wherein said recombinant herpesvirus antigen comprises an amino acid sequence having at least 85% identity with an amino acid sequence

selected from the group consisting of SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:26.

84. (New) The method of claim 69, wherein said recombinant herpesvirus antigen comprises an amino acid sequence having at least 85% identity with an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20 and SEQ ID NO:22.

85. (New) The method of claim 69, wherein said recombinant parvovirus antigen comprises an amino acid sequence having at least 85% identity with an amino acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:8 and SEQ ID NO:12.

86. (New) The method of claim 69, wherein said recombinant calicivirus antigen is encoded by a nucleic acid sequence having at least 85% identity with a nucleic acid sequence selected from the group consisting of SEQ ID NO:1 and SEQ ID NO:3.

87. (New) The method of claim 69, wherein said recombinant herpesvirus antigen is encoded by a nucleic acid sequence having at least 85% identity with a nucleic acid sequence selected from the group consisting of SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, and SEQ ID NO:25.

88. (New) The method of claim 69, wherein said recombinant herpesvirus antigen is encoded by a nucleic acid sequence having at least 85% identity with a nucleic acid sequence selected from the group consisting of SEQ ID NO:17, SEQ ID NO:19, and SEQ ID NO:21.

89. (New) The method of claim 69, wherein said recombinant parvovirus antigen is encoded by a nucleic acid sequence having at least 85% identity with a nucleic acid sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:7 and SEQ ID NO:11.

90. (New) The method of Claim 71, wherein said biological specimen is selected from the group consisting of blood, serum, plasma, saliva, urine, tears, aqueous humor,

cerebrospinal fluid, lymph, nasal secretion, tracheobronchial aspirate, milk, colostrum, intestinal secretion and feces.

91. (New) The method of Claim 71, wherein said animal is selected from the group consisting of a cat, dog and horse.

92. (New) The method of Claim 71, wherein said recombinant antigen is selected from the group consisting of a feline calicivirus capsid protein, a feline herpesvirus glycoprotein B protein, a feline herpesvirus glycoprotein C protein, a feline herpesvirus glycoprotein D protein, a feline parvovirus VP12 protein, a feline parvovirus VP2 protein, a feline leukemia virus p27 protein, a feline leukemia virus gp70 protein, and a feline leukemia virus p27-gp70 fusion protein.

93. (New) The method of Claim 92, wherein said recombinant antigen comprises an amino acid sequence having at least 85% identity with an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, and SEQ ID NO:32.

94. (New) The method of Claim 92, wherein said recombinant antigen comprises an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, and SEQ ID NO:32.

95. (New) The method of Claim 92, wherein said recombinant antigen is encoded by a nucleic acid sequence having at least about 85% identity with a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19,

SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, and SEQ ID NO:31.

96. (New) The method of Claim 92, wherein said recombinant antigen is encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, and SEQ ID NO:31.

97. (New) The method of Claim 71, wherein said biological specimen is contacted with a recombinant calicivirus antigen, a recombinant herpesvirus antigen and a recombinant parvovirus antigen under conditions such that the immune status of said animal to calicivirus, herpesvirus and parvovirus infection is determined.

98. (New) The method of Claim 71, wherein said biological specimen is contacted with a recombinant parvovirus protein, a recombinant calicivirus protein, a recombinant herpesvirus protein and a recombinant feline leukemia virus protein under conditions such that the immune status of said animal to parvovirus, calicivirus, herpesvirus and feline leukemia virus infection is determined.

99. (New) The method of Claim 75, wherein said biological specimen is selected from the group consisting of blood, serum, plasma, saliva, urine, tears, aqueous humor, cerebrospinal fluid, lymph, nasal secretion, tracheobronchial aspirate, milk, colostrum, intestinal secretion and feces.

100. (New) The method of Claim 75, wherein said animal is selected from the group consisting of a cat, dog and horse.

101. (New) The method of Claim 75, wherein said recombinant antigen is selected from the group consisting of a feline calicivirus capsid protein, a feline herpesvirus glycoprotein B protein, a feline herpesvirus glycoprotein C protein, a feline herpesvirus glycoprotein D

protein, a feline parvovirus VP12 protein, a feline parvovirus VP2 protein, a feline leukemia virus p27 protein, a feline leukemia virus gp70 protein, and a feline leukemia virus p27-gp70 fusion protein.

102. (New) The method of Claim 101, wherein said recombinant antigen comprises an amino acid sequence having at least 85% identity with an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, and SEQ ID NO:32.

103. (New) The method of Claim 101, wherein said recombinant antigen comprises an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, and SEQ ID NO:32.

104. (New) The method of Claim 75, wherein said recombinant antigen is encoded by a nucleic acid sequence having at least about 85% identity with a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, and SEQ ID NO:31.

105. (New) The method of Claim 101, wherein said recombinant antigen is encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, and SEQ ID NO:31.

106. (New) The method of claim 75, wherein said biological specimen is contacted with a recombinant calicivirus antigen, a recombinant herpesvirus antigen and a recombinant parvovirus antigen under conditions such that the immune status of said animal to calicivirus, herpesvirus and parvovirus infection is determined.

107. (New) The method of claim 40, wherein said biological specimen is contacted with a recombinant parvovirus protein, a recombinant calicivirus protein, a recombinant herpesvirus protein and a recombinant feline leukemia virus protein under conditions such that the immune status of said animal to parvovirus, calicivirus, herpesvirus and feline leukemia virus infection is determined.